AT4S²™

Advanced Technology 4 Smart Services

# Are you ready to drive your business forward?

Business Presentation

Certified Partner

infor EAM

Supporting Member

Associazione Italiana Manutenzione

A.I.MAN. 1959-2019

# ABOUT US

Know more about our history, mission, vision and values

## HISTORY

AT4 Smart Services was born in 2017 with long-term and multisectoral knowledge and experience, thanks to the know-how acquired by the hired staff, coming from a spin-off organized by a multinational company dedicated to the development of activities carried out on productivity, efficiency and reliability.

## MISSION

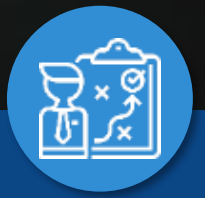
Deliver an advanced **digital management platform** to drive the best in class of maintenance target with highest performance on **reliability**, **productivity** and **efficiency**.

## VISION

Realizing high technology solutions based on **deep learning**, **machine learning** and **artificial intelligence** fully integrated in the Industrial digitalization **4.0** process.

## INNOVATION

Through our commitment to continuously innovate, we unlock a new value everyday



## PROFESSIONALISM

We know how to do our job and we are fearless in pursuit of reaching your goals

## CLIENT SATISFACTION

The reason we exist is the Client and the satisfaction of its needs

OUR CORE VALUES

# ABOUT US

## Flavio Beretta – CEO & Founder

I've learnt from every single experience I've been through, ending up by knowing in detail the problems of the industrial world, more specifically about maintenance and production.

By understanding and analyzing the obstacles that have always limited the efficacy and efficiency of the results, I understood that the digital instruments have not been used at their 100% power in the maintenance world.

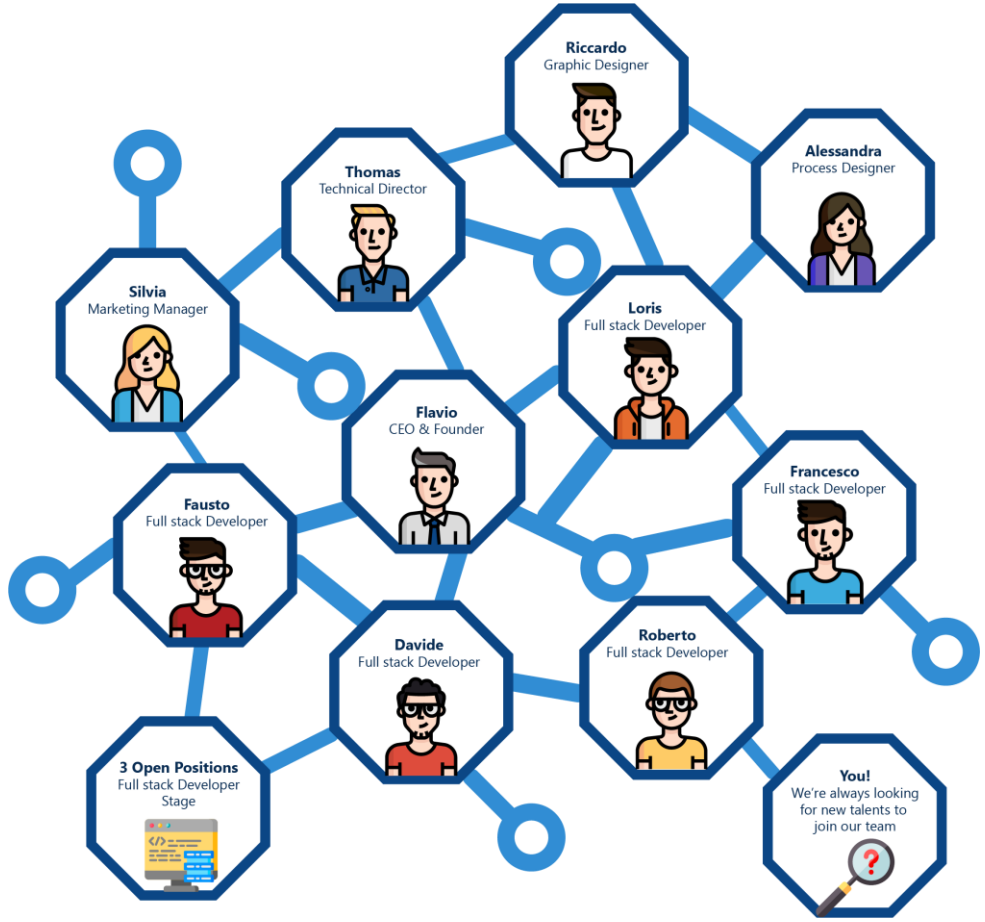
So, together with almost 40 years of experience in the field of industrial maintenance and the passion for technological innovation, in 2017 I founded AT4S2 (Advanced Technology 4 Smart Services).

AT4S2 offers its Clients high professional consulting, a set of advanced asset management tools and efficient systems integration.

**A startup CEO is someone ready to take the risk, believing in a mixture of gut instinct, passion and knowledge.**

## The team

The team, initially created through a spin-off from a multinational company, was integrated over the years with people who are close-knit, passionate and enthusiastic about their work.

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## ADVANCED

*Stands for*

**Digital management platform** for the best in class maintenance concepts with highest performance on Reliability, Efficiency and Productivity

## TECHNOLOGY

*Stands for*

**Solutions based on deep learning, machine learning and artificial intelligence** fully integrated in the Industrial digitalization process to predict and prevent failures

## 4

*Stands for*

Industry 4.0

## SMART

*Stands for*

**Productive solutions** developed with user-friendly web and mobile applications integrated on industry processes

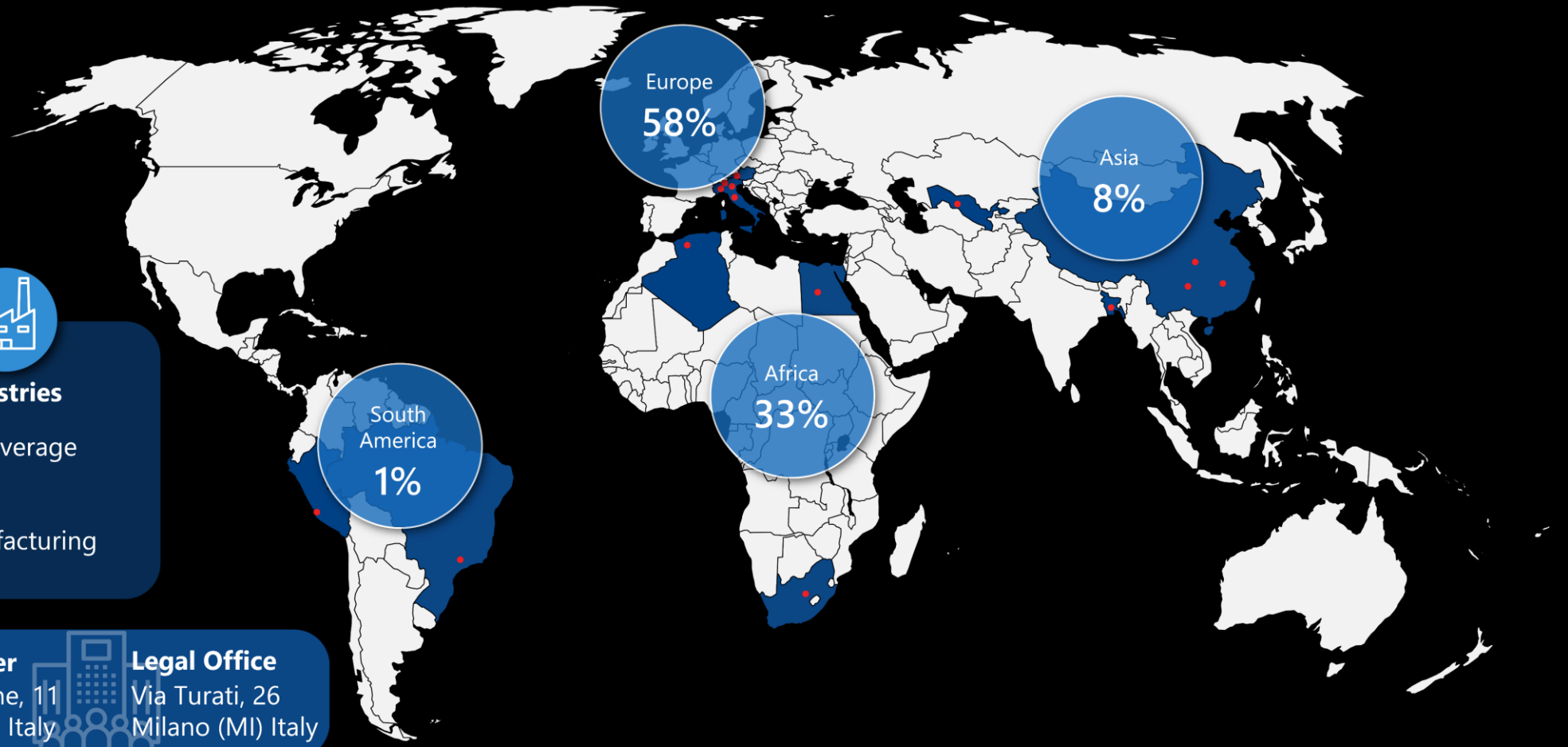
## SERVICES

*Stands for*

**High performances** for the entire Asset Management value chain and the production process

# OUR PROJECTS & LOCATIONS

Wherever you are, we help you find the right way for operational excellence




**Industries**

Food & Beverage
Metals
Utility
EPC Manufacturing

**Headquarter**
Via Sempione, 11
Monza (MB) Italy

**Legal Office**
Via Turati, 26
Milano (MI) Italy

# OUR BUSINESS IN A NUTSHELL

Developed through our solid and deep competences acquired in the years

## OUR OFFER

We offer smart solutions for a **World-class Maintenance** and Best in class development

- Professional Consulting
- Advanced Asset Management Tools
- Systems' Integration

Six main solutions:

- AT4DRIVER
- AT4MANAGEMENT
- AT4ASSESSMENT
- AT4SAFETY
- AT4SHELL
- AT4RELIABILITY

## MAIN BENEFITS

- Cost savings
- Safety and quality
- Industry 4.0
- Warehouse optimization
- Productivity & Reliability improvement

## CUSTOMER VALUE

- Dynamic
- Smart
- Real knowledge

# OUR OFFER

We offer smart solutions for a World-class Maintenance and Best in class development

### Professional Consulting

- Maintenance Process & Organization
- Reliability & Availability Improvement
- Preventive Maintenance Optimization
- Warehouse & Spare parts Optimization
- Energy Efficiency Improvement
- Maintenance Digitalization & Automation
- Training & Coaching

### Advanced Asset Management Tools

- AT4DRIVER
- AT4MANAGEMENT
- AT4ASSESSMENT
- AT4SAFETY
- AT4RELIABILITY
- AT4SHELL
    - AT4PRODUCTIVITY
    - AT4SUPPLIERS
    - AT4LIBRARY
    - AT4TICKETING

### Systems' Integration

- ERP systems
- MES systems
- SCADA systems and factory automation
- Energy consumption monitoring systems
- IoT platforms
- On-condition monitoring systems
- Presence control systems
- EAM systems

# PROFESSIONAL CONSULTING – AREAS

## Maintenance Process & Organization

- Maintenance organization design
- Processes mapping, definition of responsibilities and book of roles
- Evaluation of skills vs. roles
- Maintenance and Reliability management development
- Planning & Scheduling
- Maintenance Logistics design and implementation
- Change management preparation and support
- Training plan preparation
- Implementation of ISO 55001

1

## Reliability & Availability Improvement

- Equipment breakdown structure
- Asset criticality analysis
- Failure Mode Effect and Criticality Analysis (FMECA)
- Reliability Centered Maintenance (RCM)
- RAM performance simulations based on stochastic models
- Asset integrity review
- Risk Based Inspection

2

## Preventive Maintenance Optimization

- Preventive, Predictive and Condition Based maintenance design
- Preventive maintenance plans elaboration
- Preventive maintenance standard operating procedures elaboration
- Law-driven maintenance identification & preparation
- Safety equipment preventive maintenance definition
- Normatives compliance evaluation

3

## Warehouse & Spareparts Optimization

- Equipment breakdown structure
- Asset criticality analysis
- Failure Mode Effect and Criticality Analysis (FMECA)
- Reliability Centered Maintenance (RCM)
- RAM performance simulations based on stochastic models
- Asset integrity review
- Risk Based Inspection

4

## Energy Efficiency Improvement

- Detailed energy efficiency assessment
- Elaboration of the portfolio of improvement opportunities
- Feasibility study for some selected main improvement opportunities
- Technology scouting and qualification

5

## Maintenance Digitalization & Automation

- Enterprise asset management system costumization & implementation
- OEE monitoring system
- Dashboard and business intelligence design & implementation
- Performance & condition monitoring
- Safety tracking
- Asset, network and IT infrastructure assessment & upgrade
- Field maintenance automation design & implementation
- System integration

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## Training & Coaching

- Training for maintenance managers
- Training for maintenance engineers
- Training for maintenance supervisors
- Technical training on specific technological topics
- Training on the job
- Mid-long term coaching & tutoring
- Skills re-qualification

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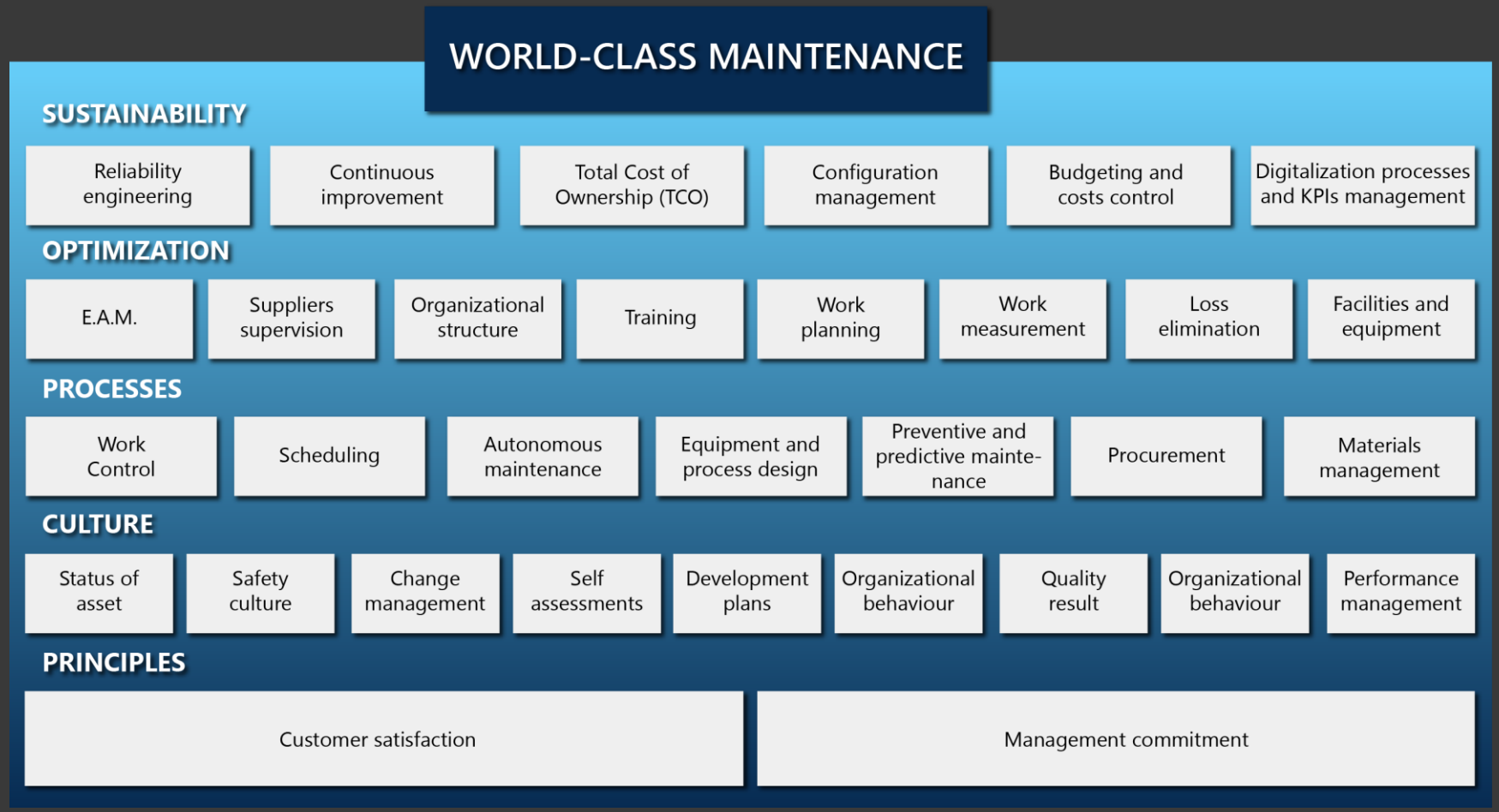
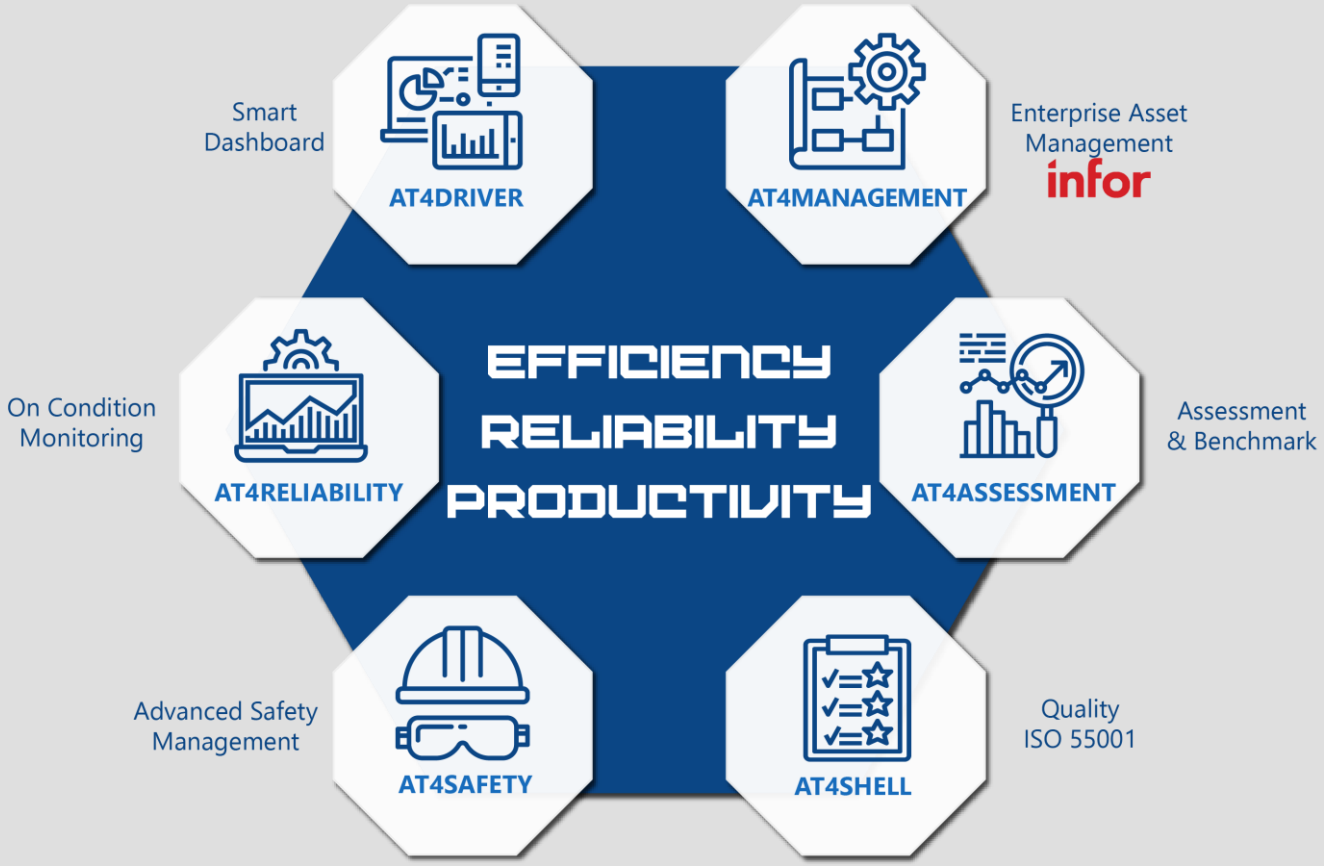
# PROFESSIONAL CONSULTING MODEL

## Objectives



# SMART SOLUTIONS FOR MAXIMUM EFFICIENCY

Always keep under control your efficiency, reliability and productivity




Manage and monitor Maintenance and Production Performance Indicators (KPIs)

Manage the complete Maintenance and Asset Management processes (EAM system)

Perform the "performance evaluation" of the maintenance processes and people compared with industry benchmarks

Manage Quality processes (in compliance with ISO 55001)

Manage and monitor Safety processes (in terms of analysis and prevention)

Monitor technical parameter through a "Condition Monitoring System"

# AT4DRIVER

## Smart Dashboard

### AT4DRIVER is the heart and intelligence of the platform.

It's a smart dashboard which allows you to:

- define KPIs and targets
- monitor results in real time
- configure set-points and alarms
- manage actions on condition
- monitor projects and continuous improvement actions
- analyze continuous improvement plans through periodic assessments
- set up a customized dashboard with the main kpis
- monitor productivity data (oee, availability etc)
- monitor results of economic-technical efficiency
- compare KPIs between different production sites

# BEST IN CLASS MAINTENANCE SYSTEM

Example of main parameters managed by AT4DRIVER

| AREA | CATEGORY | | |
|---|---|---|---|
| WORK ORDERS & TICKETS | Status<br>Category<br>Classes<br>Lead time<br>Backlog<br>Pareto Analysis | | |
| SAFETY | Global Safety Index | IF - Frequency Index<br>IG - Gravity Index | |
| | Categorization | Incident<br>Causes<br>Place<br>Part of body<br>Site | |
| | Mean time action follow up<br>Preventive inspection<br>Unsafe conditions | | |
| QUALITY | Legal requirements<br>Product requirements | PmP on time delivery<br>Calibrations results on target | |
| RELIABILITY | MTTR<br>MTBF<br>RPI - Reliability Performance Indicator (MTBF/MTTR) | | |
| CONTINUOUS IMPROVEMENT | Activity & projects gant<br>Training hours<br>Suppliers evaluation<br>Customer satisfaction | | |
| EFFICIENCY | Maintenance cost on budget<br>Productivity cost<br>Energy vectors cost efficiency<br>Maintenance productivity | | |

| AREA | CATEGORY | |
|---|---|---|
| COSTS | per type of work | Maintenance type<br>Work type<br>Account type |
| | per asset | Equipment tree level<br>Category<br>Asset - Criticality<br>TCO - Total Cost of Ownership |
| | Pareto analysis (only per multisite) | |
| PRODUCTION PRODUCTIVITY | Cycle time<br>Set-up time<br>Downtime<br>Overall Equipment Effectiveness (OEE)<br>Quality production result | |
| | Traceability | Products<br>Orders |
| | Raw material | Stock<br>Consumption |
| MAINTENANCE PRODUCTIVITY | Maintenance schedule compliance<br>Maintenance planning compliance (result/planned)<br>Maintenance overtime<br>WO with registered costs<br>WO opened on machine level<br>Root cause analysis on WO breakdowns<br>Planned maintenance work | |
| WAREHOUSE | Inventory Rotation Index (IRI) | Products<br>Orders |
| | Value | Stock<br>Consumption |
| | Stock out alarm<br>Safety Stock<br>Critical spares alarm<br>Multiwarehouse management | |

# BEST IN CLASS MAINTENANCE SYSTEM

Example of Performance Indicators based on BS EN 15341 STANDARDS

### PRODUCTIVITY

- Productivity Indicator/ total performance (Overall Equipment Effectiveness)
- Technical Downtime (TD)
- Process availability, line, machine
- Product quality

area - process - production line

### PERSONNEL

- Hours spent on training on hours worked
- Overtime work
- Staff Assessment

### RELIABILITY

- Reliability Performance Indicator (RPI)
- Mean Time Between Failures (MTBF)
- Mean Time To Repair (MTTR)
- Compliance of the maintenance program


### EFFICIENCY

- Scheduled maintenance on total maintenance
- Planning respect
- Total maintenance costs
- Energy Efficiency

### STOCK & SPARE PARTS

- Stock value (YSV)
- Spare parts turnover index/warehouse (IRI)
- Spare parts with stockability indicators on spare parts total

### SAFETY

- Global safety indexes
- Number of preventive safety inspections
- Number of detected unsafe conditions
- Average resolution time of an anomaly

### SUSTAINABILITY

- Percentage in compliance with legal maintenance
- Percentage of maintenance plans that have been carried out
- Compliance with training plan



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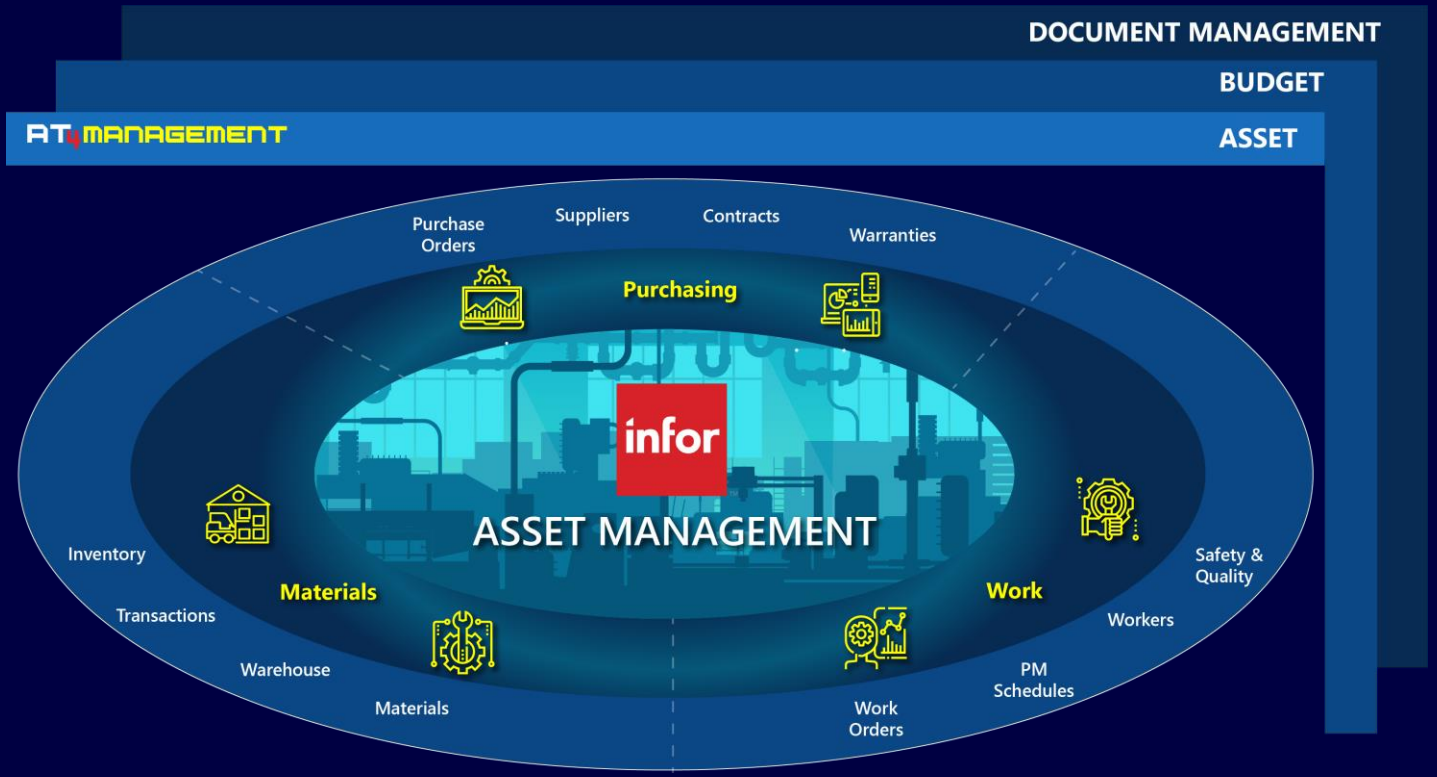
# AT4MANAGEMENT

## Enterprise Asset Management

AT4MANAGEMENT is a specific personalization of Infor EAM, a software solution for the management of first-rate corporate resources with integrated functionality and flexibility. Integrated with the applications/solutions of the AT4S2 platform, the different ERP systems and the technological automation systems, AT4MANAGEMENT is the basis for the implementation of continuous improvement processes and the implementation of world-class manufacturing (World class Maintenance process).

AT4MANAGEMENT manages the complete resource management process: from projects to work orders, from the purchase request to purchase orders and performance registration, from the inventory of spare parts to the management of security stocks, from the skills of the technicians to the skills of suppliers.



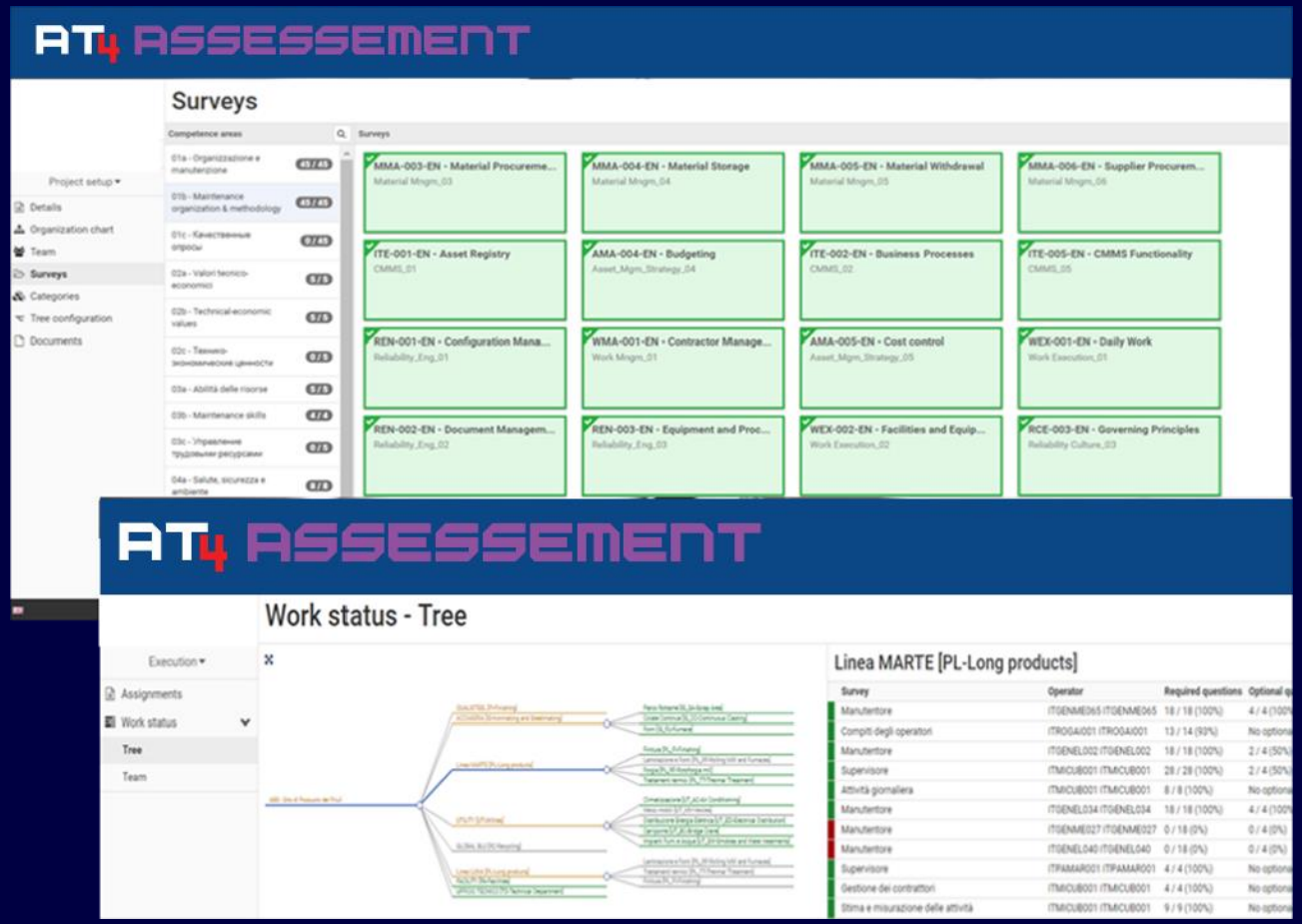
# AT4ASSESSMENT

## Assessment & Benchmark

AT4ASSESSMENT supports analysts during the evaluation, both management and technical related, which can be adequately customized and configured.

It consists of two main parts: a central web application that can be accessed using an Internet browser and a mobile application for installation on mobile devices, sch as smartphones and tablets, which can be easily used during work.

AT4ASSESSMENT process focuses on 12 main categories based on the world-wide maintenance process: maintenance and assessment of people's skills organization, work order process, interventions planning and scheduling, tools, cost control, purchases and suppliers management, warehouse management and optimization of spare parts, process mapping and productivity analysis, quality and safety management, digitalization processes, KPI management and continuous improvement.



# PERFORMANCE ASSESSMENT

## QUALITATIVE ANALYSIS

**12 areas of self-assessment** and site survey:

- Asset management strategy
- Entreprise Asset Management System (EAM)
- Human resources management
- Materials management and warehouse
- Performance management
- Planning and scheduling management
- Culture of reliability
- Reliability engineering methods
- Execution of works
- Work management
- Health, Safety and Environment
- Ability of maintenance personnel

ISO 55001

## BENCHMARK ANALYSIS

**44 benchmark indicators**, divided into 3 groups:

- Economical
  - Total Maintenance Cost/ Revenues
  - Total Maintenance Cost/Quantity of Output
  - .....
- Organizational
  - % of hours planned vs hours worked
  - % of worked hours per maintenance types
  - .....
- Technical
  - Plant availability
  - MTTR, MTBF,
  - .....

UNI EN 15341

## QUALIFICATION OF MAINTENANCE PERSONNEL

**3 professional figures** for personnel qualification in relation to the tasks to be carried out in the context of the maintenance of plants, infrastructures and production systems.

- Maintenance manager
- Maintenance supervisor and maintenance engineer
- Maintenance specialist

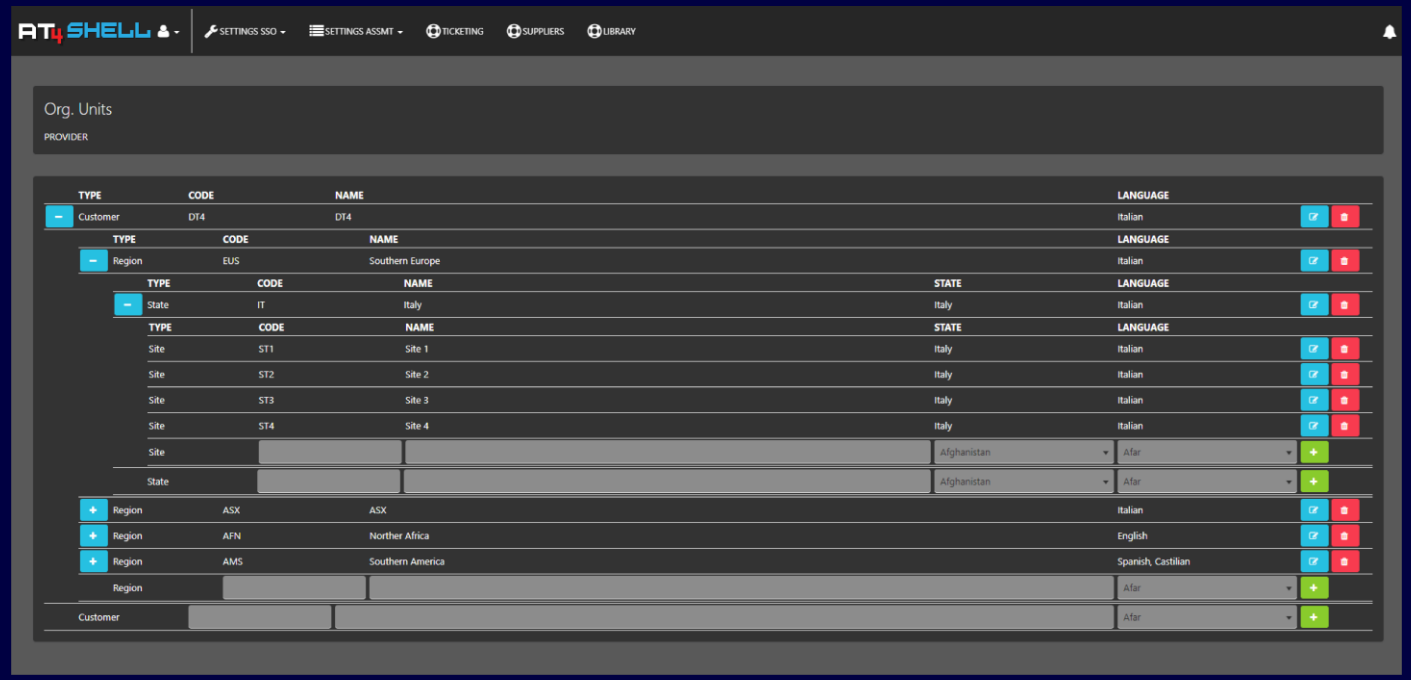
UNI EN 15628

# AT4SHELL

## Quality ISO 55001

AT4 SHELL is an integration of different tools designed to satisfy the ISO 55001 Asset management systems – requirements:

- Single Sign-On portal management: one single access to all applications
- SETTINGS of AT4PRODUCTS: back-end management
- TICKETING management tool: It allows the Customer only one single point of contact (SPOC) for any type of intervention, action or communication and manages the "Service Level Agreement" with dedicated online KPIs
- SUPPLIERS portal: Suppliers' qualification and evaluation, activities registration, goods receipts and Work Certificate management.
- LIBRARY: Site documents management portal. Fully integrated into AT4S2 platform, it permit to upload documents for any application, manages versioning through a dedicated workflow and manages alarms on the expiration date



# AT4SAFETY

## Advanced Safety Management

AT4SAFETY is a suite of modules designed and developed to support the implementation of operational safety in industrial and non-industrial work environments, construction sites, dangerous places where it is important to check whether the workers have obtained all the necessary conditions to perform the work assigned and performed the necessary risk analysis before entering / executing the activity. It makes managing subcontractors easier and processes work progress in real time.

**Safety web** manages the complete recording and monitoring of all aspects relevant to safety: events, unsafe conditions, unsafe actions, avoided accidents, planned safety inspections and activity risk analysis.

**Safety gate** is based on the use of radiofrequency and automatic identification to facilitate and make more efficient the collection of information that can be crucial in some workplaces, to ensure an adequate and reliable level of worker safety, automatically controlling the use of PPE and the availability of all training certificates necessary to perform certain tasks.


# AT4RELIABILITY

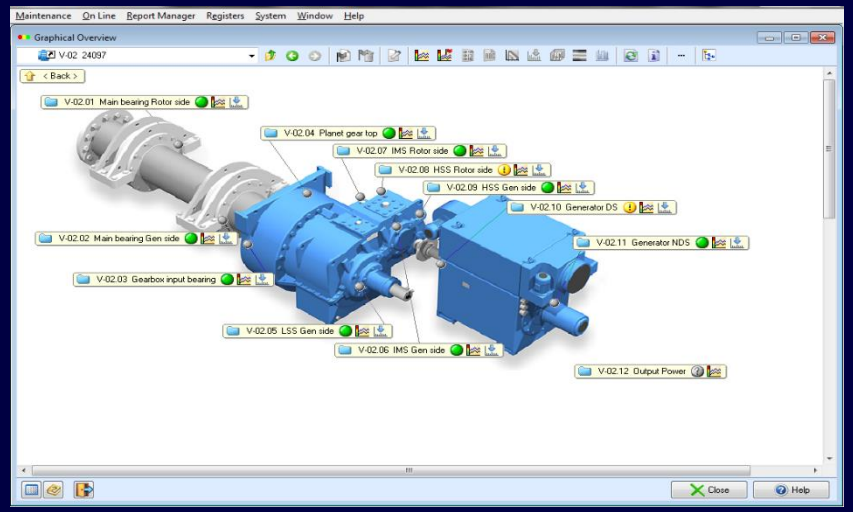
## On Condition Monitoring

AT4RELIABILITY is a system for monitoring online physical conditions. The application allows to develop and monitor a complete predictive maintenance thanks to the interconnection with the automation process, machines and lines.

For the main predefined alarms in AT4RELIABILITY, the product AT4MANAGEMENT generates automatic work orders to have complete traceability of the analysis / results of the causes of failure and of the diagnoses performed on the components.

Set points and alarms can be set on the main technical parameters to prevent and foresee possible interruptions and production stops.

Specific algorithms designed for machines / processes allow maintenance technicians to design and decide the most correct and efficient proactive maintenance

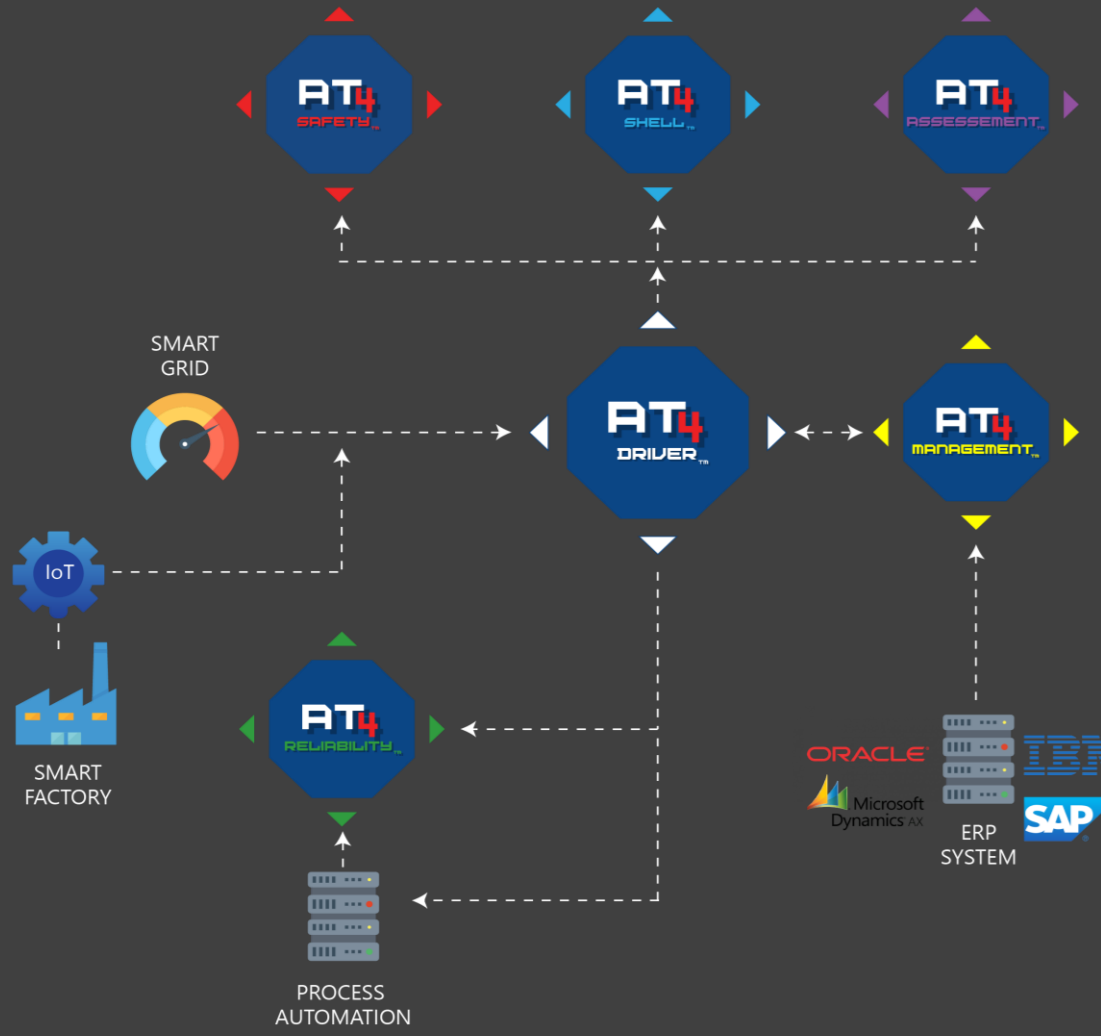



# PERFECTLY INTEGRATED SOLUTIONS

## Safe and effective communication flows

Interconnection with external systems can be implemented through dedicated middleware systems or the interchange of XML/ SOAP flows, through different transport systems (http/ https/ sftp/ …) or through REST calls on http.

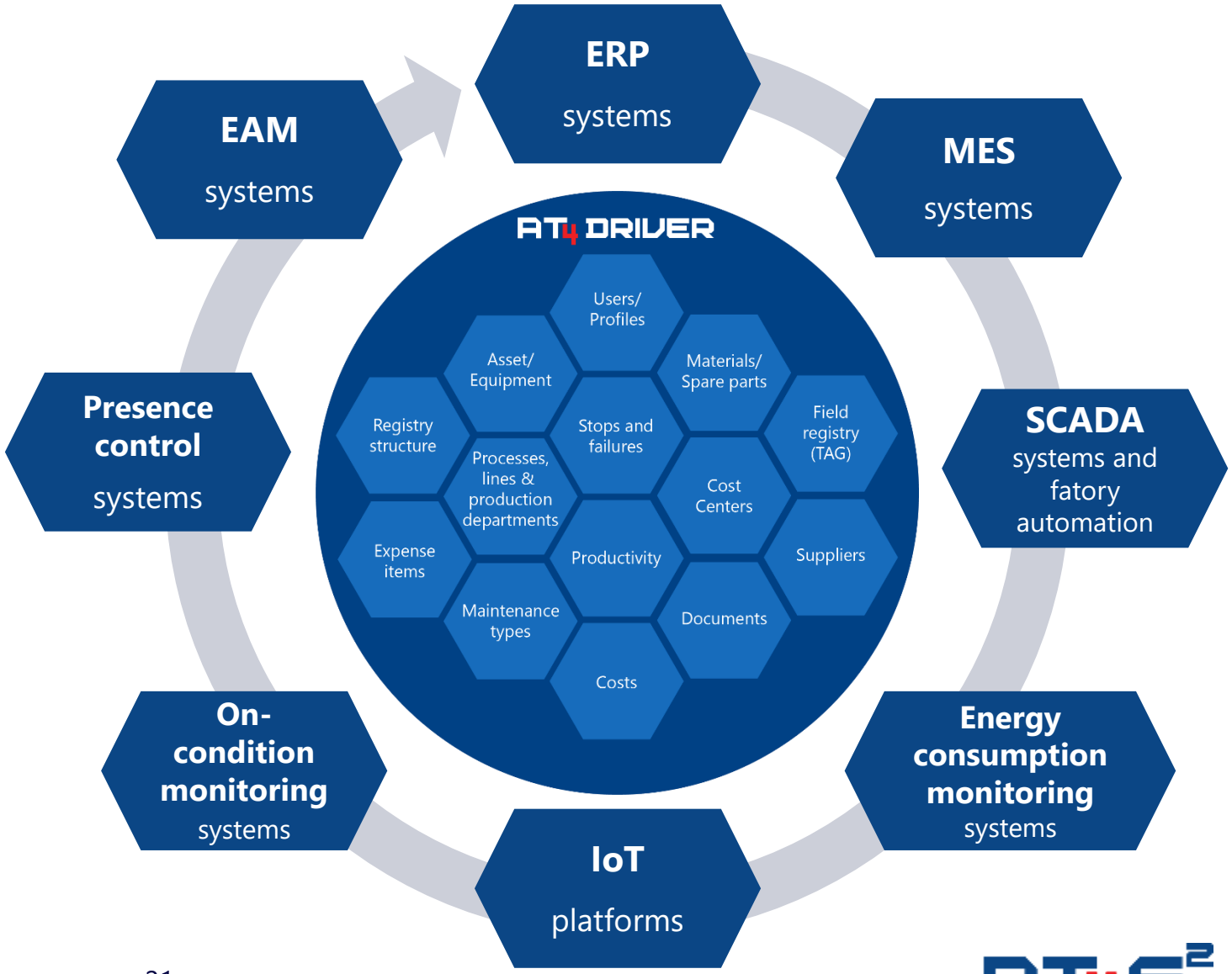
AT4S2 platform can also collect data directly from the field (through IoT architectures) by communicating with existing sensors or equipment or systems chosen for projects needs and placed on different equipment according to the study problems, simulating and monitoring their operation, either individually and related to other variables of a logical process.



# PERFECTLY INTEGRATED SOLUTIONS

## Example of information flows

1. **With factory AUTOMATION system** (frequency: every event)
    a. Event type (failure, programmed stop, format change, restart)
    b. Equipment code/ technical object
    c. Product code in process
2. **With factory AUTOMATION system** (frequency: daily)
    a. Machine code
    b. Hours worked/ cycles performed
3. **With MES system -** Manufacturing Execution System (frequency: work shift)
    a. Date - start production time
    b. Date - end of production time (if terminated within the shift)
    c. Type of processed product
    d. Quantity produced in the period of time
    e. Production line code / Process
4. **With ERP systems** (frequency: every event)
    a) Purchase Requests
    b) Purchase Orders / framework contracts
    c) Performance revenue (services)
    d) Unloading of goods (materials)
    e) Goods loading and returns
    f) Materials registry
    g) Project master data
    h) Supplier Master Data
    i) Master Data Costs
    j) Cost Centers Registry
    k) Employee registry
    l) Supplier audit



# MAIN BENEFITS

The real added value for our Clients

BENCHMARK ASSESSMENT

INDICATORS AND OBJECTIVES

COSTS

RELIABILITY

PRODUCTIVITY «OEE»

ENERGY EFFICIENCY

STOCKS & SPARE PARTS

SAFETY AND ENVIRONMENT

WORK ORDERS

CONTINUOUS IMPROVEMENT

RESOURCES

## COST SAVINGS

- Better budget's management
- Better expenses' management
- Optimization of productivity
- Optimization of "make or buy" decision process
- Reduction of energy consumptions
- Lost time reduction
- Lead time reduction

## SAFETY AND QUALITY

- Online global safety results: global index, incident, safety preventive actions
- Quality and legal traceability: legal requirements, product requirements, on time delivery
- Reduction of safety risk and incidents

## WAREHOUSE OPTIMIZED

- Online inventory value
- Online Inventory rotation Index (for total warehouse and single spares)
- Stock-out management
- Multi warehouse management
- Critical spare management

## CONTINUOUS IMPROVEMENT

- Failures reductions, growth of productivity
- Optimization of maintenance policies/strategy
- Continuous cost reduction due to lack of quality (zero-defects strategy)
- Continuous cost reduction due to noncompliance

# CUSTOMER VALUE

We give you a smart solution, tailored to your needs

### DYNAMIC

Dynamic business process management is an approach designed to allow business processes to adjust quickly to changing business needs. In dynamic BPM, processes are designed to be highly adaptable, allowing participants to make rapid process adjustments at any time with low latency. The approach is used by organizations seeking to maintain and increase process efficiencies in fast-changing, chaotic business environments.

### REAL KNOWLEDGE

We have joined in a coherent and productive way the real experience of our team, the designs and processes for our services , our files of documents and our plans for future activities and we have created AT4S² and related services.

We are sure to have the know how, expertise and power for become a fundamental supplier for your business grown.

### SMART

We love to indicate our concept of smart service as something of "user friendly" but at the same time this need to be really a full service. Everyday our team work to improve this concept, we love to provide our solution as easy to understand and use in day by day work. Your business can be also complicated, our mission is to give you a perfect control in an easy but useful way.



AT4S² Advanced Technology Smart Services

# Drive Your Business Forward


Thank you for your attention